

IN THE CLAIMS

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1. (Currently Amended) A logic emulation module comprising:

a plurality of programmable LSIs capable of programming logic;

a plurality of switching LSIs capable of programming connections;

connectors for electrical connection to entities external to the module;

a board on which to mount said plurality of programmable LSIs, said plurality of switching LSIs and said connectors; and

wiring furnished on said board for carrying data during emulation;

wherein said wiring at least includes lines for directly coupling said connectors to said programmable LSIs and lines for linking said connectors to said programmable LSIs by way - of said switching LSIs; and

wherein on said logic emulation module, at least a part of logically equivalent functions to an LSI to be developed are mounted on a logic board prepared for logic verification.

2. (Original) A logic emulation module according to claim 1, further comprising lines for connecting each programmable LSI to said plurality of switching LSIs.

3. (Original) A logic emulation module according to claim 1, further comprising lines for connecting each switching LSI to said plurality of programmable LSIs.

4. (Original) A logic emulation module according to claim 2, further comprising lines for connecting each switching LSI to said plurality of programmable LSIs.

5. (Original) A logic emulation module according to claim 1, wherein said plurality of programmable LSIs and said plurality of switching LSIs are mounted on a face and a back of said board.

6. (Original) A logic emulation module according to claim 5, wherein said LSIs are mounted in opposite fashion on said face and said back of said board, and wherein signal lands shared by said LSIs are positioned in opposite fashion on the two sides of said board, said signal lands being interconnected by use of through-holes.

7. (Original) A logic emulation module according to claim 6, wherein said programmable LSIs are mounted on said face of said board, and said switching LSIs and connectors for

connection to a logic board are mounted on said back of said board.

8. (Original) A logic emulation module according to claim 1, wherein said connectors are furnished on a face and a back of said board.

9. (Original) A logic emulation module according to claim 8, wherein, of pins on said connectors, at least those for power supply and ground lines are positioned in opposite fashion on said face and said back of said board and connected by use of through-holes.

10. (Original) A logic emulation board comprising:  
a board;  
connectors for connection to logic emulation modules mounted on said board; and  
terminal lands for supporting an LSI targeted for development and mounted on said board.

11. (Original) A logic emulation board according to claim 10, further comprising board wiring for connecting pins of said connectors to said terminal lands on a one-to-one basis.

12. (Original) A logic emulation device made of a logic emulation board and a logic emulation module connected to said logic emulation board;

wherein said logic emulation board includes:

a board;

connectors for connection to said logic emulation module mounted on said board; and

terminal lands for supporting an LSI targeted for development and mounted on said board; and

wherein said logic emulation module includes:

a plurality of programmable LSIs capable of programming logic;

a plurality of switching LSIs capable of programming connections;

connectors for electrical connection to said logic emulation board;

a board on which to mount said plurality of programmable LSIs, said plurality of switching LSIs, and said connectors; and

wiring furnished on said board and carrying data during emulation, said wiring at least including lines for directly coupling said connectors to said programmable LSIs and lines for linking said connectors to said programmable LSIs by way of said switching LSIs.

13. (Currently Amended) A logic module on a board, at least on one side of said board comprising:

a plurality of programmable logic elements;

connectors for exchanging input and output signals to and from said plurality of programmable logic elements; and

switching elements for controlling connections between said plurality of programmable logic elements; and

terminal lands for supporting an LSI targeted for development and mounted on said board,

wherein said plurality of programmable logic elements are connected either to said connectors or to said switching elements; and

wherein logic data for logic verification are programmed in said plurality of programmable logic elements.

14. (Original) A logic module according to claim 13, wherein said connectors are furnished on a first and a second side of said board at the same edge thereof, and wherein some of oppositely located terminals of said connectors on said first and said second side of said board transmit the same signal each.

15. (Original) A logic module according to claim 13, wherein said plurality of programmable logic elements are furnished on at least part of a first side of said board;

wherein said switching elements are located on a second side of said board in opposite relation with said plurality of programmable logic elements;

wherein a second board with a predetermined land layout is interposed between said plurality of programmable logic elements or said switching elements on the one hand and said board on the other hand; and

wherein some of terminals provided for said plurality of programmable logic elements and dealing with the same signals as some of terminals provided for said switching elements are connected to the latter terminals by through-holes furnished on said second board.

16. (Currently Amended) A logic board for carrying integrated circuits, comprising:

a plurality of terminal lands for connecting terminals of said integrated circuits to said logic board; and

connectors for connection to a logic module supporting programmable logic elements in which logic of said integrated circuits is programmed, as a functional equivalent logic,

wherein said plurality of terminal lands and said connectors are located in peripheral portions of said logic board where said integrated circuits are mounted; and

wherein said terminal lands and terminals of said connectors are linked on a one-to-one basis.

17. (Original) A logic verification system connecting, for logic verification, a logic module implementing logic of integrated circuits to a logic board carrying said integrated circuits;

wherein said logic module mounted on at least one side of said logic board includes:

a plurality of programmable logic elements;

a first connector for exchanging input and output signals to and from said logic elements; and

switching elements for controlling connections between said plurality of programmable logic elements;

wherein said logic board includes:

a plurality of terminal lands for connecting terminals of said integrated circuits to said logic board; and

a second connector for connecting said logic module to peripheral portions of said logic board where said integrated circuits are mounted;

wherein said plurality of programmable logic elements are connected to either said first connector or to said switching elements;

wherein logic data for logic verification are programmed in said plurality of programmable logic elements; and

wherein said terminal lands and terminals of said second connector are linked on a one-to-one basis.

18. (Original) An integrated circuit having undergone logic verification by a logic verification system connecting a logic module implementing logic of said integrated circuit to a logic board carrying said integrated circuit;

wherein said logic module mounted on at least one side of said logic board includes:

a plurality of programmable logic elements;

a first connector for exchanging input and output signals to and from said logic elements; and

switching elements for controlling connections between said plurality of programmable logic elements;

wherein said logic board includes:

a plurality of terminal lands for connecting terminals of said integrated circuit to said logic board; and

a second connector for connecting said logic module to peripheral portions of said logic board where said integrated circuit is mounted;

wherein said plurality of programmable logic elements are connected to either said first connector or to said switching elements;

wherein logic data for logic verification are programmed in said plurality of programmable logic elements; and

wherein said terminal lands and terminals of said second connector are linked on a one-to-one basis.



19. (Currently Amended) An integrated circuit logic verification fabricating method comprising the steps of:

mounting, on a logic board subject to logic verification, a logic module comprising a plurality of programmable logic elements and switching elements in which connections between said logic elements may be programmed;

writing logic data as to functional equivalent logic of target integrated circuits to said programmable logic elements for configurations;

verifying said logic data by useemulations using ~~of~~ said logic board and said logic module; and

generating circuits such as to implement the verified logic data by a logic synthesis,

wherein said target integrated circuits are to be electrically connected to said logic board through a plurality of terminal lands provided between said target integrated circuits and said logic board.

20. (Currently Amended) A logic module comprising:  
a plurality of programmable large-scale integrated circuits in which logic may be programmed;

a plurality of switching large-scale integrated circuits in which connections may be programmed;

a board for supporting said programmable large-scale integrated circuits and said switching large-scale integrated circuits;

a connector for transmitting signals of said programmable large-scale integrated circuits;

a terminal band for supporting an LSI targeted for development and mounted on said board;

first wiring for connecting said programmable large-scale integrated circuits to said switching large-scale integrated circuits;

second wiring for interconnecting said programmable large-scale integrated circuits;

third wiring for connecting said programmable large-scale integrated circuits to said connector; and

fourth wiring for connecting said switching large-scale integrated circuits to said connector;

wherein said first through said fourth wiring are used to connect logic signals constituting logic.

21. (Original) A logic module according to claim 20, wherein said connector is made of a first and a second connector located in opposite relation with each other on said logic board;

wherein oppositely positioned first terminals of said first and said second connector transmit a first control

signal connected in parallel to said programmable large-scale integrated circuits and said switching large-scale integrated circuits;

wherein oppositely positioned second terminals of said first and said second connector transmit an input signal of a second control signal connecting said programmable large-scale integrated circuits to said switching large-scale integrated circuits in series; and

wherein oppositely positioned third terminals of said first and said second connector transmit an output signal of said second control signal connecting said programmable large-scale integrated circuits to said switching large-scale integrated circuits in series.

22. (Currently Amended) A multi-chip module ~~having a plurality of integrated circuits mounted on a board, said multi-chip module comprising:~~

a plurality of integrated circuits;

connectors for electrical connection to entities external to the module;

a board on which to mount said plurality of integrated circuits and said connectors;

radiation plates attached to four corners of said multi-chip module for covering said integrated circuits;

metal spacers interposed between said radiation plates,  
said metal spacers being attached to four corners of said  
multi-chip module with said radiation plates; and

a heat conduction sheet interposed between said  
integrated circuits ~~on the one hand and said radiation plates~~  
~~on the other hand,~~

wherein said heat conduction sheet elastically conforms  
to and closely contacts the shapes of said integrated  
circuits.

23. (Original) A multi-chip module according to claim  
22, wherein said integrated circuits are mounted on a first  
and a second side of said board;

wherein said first and said second side of said board  
are provided with said radiation plates;

wherein one edge of a flexible heat conduction sheet is  
attached to the radiation plates on said first side of said  
board; and

wherein another edge of said flexible heat conduction  
sheet is attached to the radiation plates on said second side  
of said board.